

In the Claims:

Please cancel claims 1 to 12 without prejudice and add new claims 13 to 37.

Claims 1 to 12. (canceled)

13. (new) A crystallizable magnesium-containing aluminosilicate glass for making a highly rigid, break-resistant glass ceramic, said magnesium-containing aluminosilicate glass having a composition in percent by weight, based on oxide content, comprising:

SiO_2 5 to 33

Al_2O_3 25 to 40

MgO 5 to 25

B_2O_3 0 to 9

P_2O_5 0.1 to 10, and

at least one of Y_2O_3 , Ln_2O_3 , As_2O_3 , and Nb_2O_5 ,

in which each of said Y_2O_3 , said Ln_2O_3 , said As_2O_3 , and said Nb_2O_5 that is present in the glass is present in an amount of at least 0.1 percent by weight but no more than 30 percent by weight.

14. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 13, containing from 10 to 30 percent by weight of said Y_2O_3 and from 0 to 20 percent by weight of said Ln_2O_3 .

15. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 13, containing from 2 to 12 percent by weight of TiO_2 , from 1 to 10 percent by weight of ZrO_2 , and/or from 1 to 20 percent by weight of ZnO .
16. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 15, containing from 2 to 10 percent by weight of said TiO_2 .
17. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 13, containing at most 2 percent by weight of alkali metal oxides.
18. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 13, containing from 0 to 5 percent by weight of CaO , from 0 to 5 percent by weight of SrO , and/or from 0 to 5 percent by weight of BaO .
19. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 13, containing at most 10 percent by weight of at least one transition metal oxide.
20. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 19, in which said at least one transition metal oxide is selected from the group consisting of MnO_2 , Fe_2O_3 , NiO , CoO , Cr_2O_3 , V_2O_5 , MoO_3 and WO_3 .

21. (new) The crystallizable magnesium-containing aluminosilicate glass as defined in claim 13, which is made by a method comprising annealing at a temperature that is 5°C to 50°C above T_g for two minutes to one hour.

22. (new) A glass ceramic having a modulus of elasticity of more than 110 Gpa and made by a method comprising heating a crystallizable magnesium-containing aluminosilicate glass above a T_g thereof, said crystallizable magnesium-containing aluminosilicate glass having a composition in percent by weight, based on oxide content, comprising:

SiO ₂	5 to 33
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Al ₂ O ₃	25 to 40
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MgO	5 to 25
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B ₂ O ₃	0 to 9
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P ₂ O ₅	0.1 to 10, and
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at least one of Y₂O₃, Ln₂O₃, As₂O₃, and Nb₂O₅,

in which each of said Y₂O₃, said Ln₂O₃, said As₂O₃, and said Nb₂O₅ that is present in the glass is present in an amount of at least 0.1 percent by weight but no more than 30 percent by weight.

23. (new) The glass ceramic as defined in claim 22, in which said crystallizable magnesium-containing aluminosilicate glass contains from 10 to 30 percent by weight of said Y₂O₃ and from 0 to 20 percent by weight of said Ln₂O₃.

24. (new) The glass ceramic as defined in claim 22, in which said crystallizable magnesium-containing aluminosilicate glass contains from 2 to 12 percent by weight of TiO_2 and/or from 1 to 10 percent by weight of ZrO_2 .
25. (new) The glass ceramic as defined in claim 22, in which said crystallizable magnesium-containing aluminosilicate glass contains at most 2 percent by weight of alkali metal oxides.
26. (new) The glass ceramic as defined in claim 22, in which said crystallizable magnesium-containing aluminosilicate glass contains from 0 to 5 percent by weight of CaO , from 0 to 5 percent by weight of SrO , and/or from 0 to 5 percent by weight of BaO .
27. (new) The glass ceramic as defined in claim 22, in which said crystallizable magnesium-containing aluminosilicate glass contains less than 5 percent by weight of at least one transition metal oxide selected from the group consisting of MnO_2 , Fe_2O_3 , NiO , CoO , Cr_2O_3 , V_2O_5 , MoO_3 and WO_3 .
28. (new) The glass ceramic as defined in claim 22, having a thermal expansion coefficient (α_{20-600}) of 4 to $9 \times 10^{-6} \text{ K}^{-1}$, a flexural strength of greater than 150 MPa, a surface roughness R_a of less than 0.5 nm, and a K_{Ic} of $1.3 \text{ M Pam}^{1/2}$.
29. (new) A method of making a glass ceramic, said method comprising the

steps of:

a) providing a crystallizable magnesium-containing aluminosilicate glass with a composition in percent by weight, based on oxide content, comprising:

SiO ₂	5 to 33
Al ₂ O ₃	25 to 40
MgO	5 to 25
B ₂ O ₃	0 to 9
P ₂ O ₅	0.1 to 10, and

at least one of Y₂O₃, Ln₂O₃, As₂O₃, and Nb₂O₅,

in which each of said Y₂O₃, said Ln₂O₃, said As₂O₃ and said Nb₂O₅ that is present in the glass is present in an amount of at least 0.1 percent by weight but no more than 30 percent by weight;

b) heating said crystallizable magnesium-containing aluminosilicate glass to a first nucleation temperature within a first temperature interval above T_g of said crystallizable magnesium-containing aluminosilicate glass in order to form primary crystallites or a primary crystalline phase of spinel and sapphirine;

c) after a holding time of at least 30 minutes in which the heating of step b) takes place, heating to a main crystallization temperature within a second temperature interval above the first temperature interval in order to precipitate and grow secondary crystalline phases of sapphirine and cordierite and then optionally heating to another higher temperature to precipitate and grow other crystalline phases of the xenotime, yttrium pyrosilicate, yttropyrochlore and/or rutile class; and

d) heating the glass in accordance with holding curves determined by differential thermal analysis until the crystalline phases have precipitated;

whereby a glass ceramic with a high modulus of elasticity greater than 110 GPa, a thermal expansion coefficient (α_{20-600}) of 4 to $9 \times 10^{-6} \text{ K}^{-1}$, a flexural strength of greater than 150 MPa, a surface roughness Ra of less than 0.5 nm, and a K_{Ic} of $1.3 \text{ M Pam}^{1/2}$ is formed.

30. (new) The method as defined in claim 29, in which said crystallizable magnesium-containing aluminosilicate glass contains from 10 to 30 percent by weight of said Y_2O_3 and from 0 to 20 percent by weight of said Ln_2O_3 .

31. (new) The method as defined in claim 29, in which said crystallizable magnesium-containing aluminosilicate glass contains from 2 to 12 percent by weight of TiO_2 , from 1 to 10 percent by weight of ZrO_2 , and/or from 0 to 20 percent by weight of ZnO .

32. (new) The method as defined in claim 29, in which said crystallizable magnesium-containing aluminosilicate glass contains from 0 to 5 percent by weight of CaO , from 0 to 5 percent by weight of SrO , and/or from 0 to 5 percent by weight of BaO .

33. (new) The method as defined in claim 29, in which said crystallizable magnesium-containing aluminosilicate glass contains at most 2 percent by weight of alkali metal oxides.

34. (new) The method as defined in claim 29, in which said crystallizable magnesium-containing aluminosilicate glass contains less than 5 percent by weight of at least one transition metal oxide selected from the group consisting of MnO_2 , Fe_2O_3 , NiO , CoO , Cr_2O_3 , V_2O_5 , MoO_3 and WO_3 .
35. (new) A magnetic storage disk comprising the glass ceramic as defined in claim 22.
36. (new) A magneto-optical storage device comprising the glass ceramic as defined in claim 22.
37. (new) A mirror carrier comprising the glass ceramic as defined in claim 22.